

TOP CARD



INSTALLATION PROCEDURES AND GAME OPERATION INSTRUCTIONS

D. Gottlieb & Co.

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TOP CARD

INSTALLATION PROCEDURES AND GAME OPERATION INSTRUCTIONS

All games have been carefully inspected before leaving the factory. However, minor troubles may result due to vibration during shipment. Plugs may come out of their sockets, tilt switches may be out of adjustment, etc.

The following steps should be taken to insure the proper operation of this machine:

VISUAL INSPECTIONS TO BE DONE BEFORE PLUGGING IN LINE CORD.

1. Check for foreign material across the contacts.
2. Look for disconnected wires.
3. Check plugs to be sure they are securely seated in the sockets.
4. Dress cables to keep away from moving parts.
5. Inspect for cold solder connections.
6. Manually operate all step-up units. Action should not be sluggish.
7. Check the fuses. They should be firmly seated in the clips.
8. Adjust leg levelers so that playboard has desired pitch and is level to the horizontal axis.
9. Check the tilt switches: Vibration tilt on playboard, pendulum tilt and ball roll tilt on side panel.
10. Adjust ball roll tilt and pendulum tilt.
11. Check the bounce switches on the bottom panel and in the lightbox.
12. Check the anti-cheat switch on the front door.

PLUG IN THE LINE CORD

The coin chute lights and the scene lights in the lightbox should go on. If not, operate the on-off switch located at the bottom right front corner of the cabinet.

Raise the playboard and close the front door. Drop coins through the entrances to check alignment of coin feed troughs to rejectors. Check coin lockout wireforms; they should be out of the path of the coins when the game is on.

If the 1st coin chute adjustment is in 1 play position, inserting a coin in the 1st chute will actuate the start relay "S". Inserting a coin in the 2nd chute will actuate the 2nd chute relay "W". "W" relay will step the "replay" unit as indicated by the 2nd chute adjustment plug. (2, 3, 4, or 5 steps.)

If the 1st coin chute adjustment is in "2nd chute adjustment" position, inserting a coin in the 1st or 2nd chute will actuate the 2nd chute relay "W".

In the above examples, if the coin actuates "W" relay, it is necessary to push the red button on the front door to start the game.

OPERATING INSTRUCTIONS

1. Inserting a coin or pressing the replay button actuates "S" relay. (Start relay)
2. This relay will lock in through its own switch and a motor 2B switch.
3. The following sequence takes place through the closed switches on "S" relay.
 - a. The motor starts running.
 - b. The total play meter, reset "Ball Count" unit, subtract "Replay" unit and "A" relay coil is actuated by a switch on motor 2C.
 - c. The sequence bank is reset by a separate switch on motor 2C.
4. When "A" relay is actuated, it is locked in by the armature of "A" relay reset coil. Through closed switches the score units reset to zero through a switch on motor 1A. When all units are reset and motor 2B makes, "A" relay reset coil is actuated. This releases the armature on "A" relay and opens the switches. The reset cycle is now complete.
5. Place the ball in the outhole. When the ball makes the ball return switch "O" relay is actuated and locks in through the normally closed switches on "A" relay and motor 2B. "O" relay runs the motor. Motor 4C actuates the ball return coil through a switch on "O" relay. The ball return kicks the ball across the trough switch which steps the ball count unit once, indicating first ball in play. The ball is now in the runway and ready to be shot onto the playfield.

WHEN A TILT SWITCH IS MADE, "T" RELAY WILL ENERGIZE, A NORMALLY CLOSED SWITCH ON "T" WILL OPEN, AND BREAK THE CIRCUIT TO "R" RELAY. THE CIRCUIT TO "R" RELAY WILL ALSO OPEN IF ANY OF THE BOUNCE SWITCHES OPEN. (IN THE LIGHTBOX, ON THE FRONT DOOR OR ON THE BOTTOM PANEL).

PLAYFIELD OPERATION

Points are scored as indicated.

On 5 ball play the numbered rollovers and targets score 500 points. Completing "2" through "A" sequence lights center "A" target, center rollover button and the bottom return rollovers alternately for "Special".

On 3 ball play the numbered rollovers and targets score 1,000 points. Completing "2" through "A" sequence lights center "A" target, center rollover button and the bottom return rollovers alternately for "Special".

Hitting "2" or "K" gives "2" and "K". hitting "6" or "9" gives "6" and "9", hitting "7" or "8" gives "7" and "8".

The kicking rubbers are actuated by the ball hitting a stretched rubber and closing either of two switches. These switches cause the kicking rubber coil to energize and pull in a plunger. The plunger is connected to an arm that kicks the rubber ring with enough force to propel the ball away from it. The kicking rubbers score 10 points.

The flippers are actuated by the player pressing buttons on the sides of the cabinet. The flipper coils have two windings; one of the heavy wire that passes high current allowing a strong initial stroke, the second winding is of lighter wire and is in series with the first winding. The lighter winding is shorted out until a normally closed switch is opened by the flipper linkage. This allows the flipper to be held energized and not overheat because less current passes through the coil.

NOTE: THE PLAYBOARD PITCH SHOULD BE $3\frac{1}{2}$ DEGREES TO MAINTAIN PROPER BALL ACTION AND PLAYER APPEAL. THIS IS BUILT INTO THE GAME BY RUNNING THE LEG ADJUSTERS ALL THE WAY IN AND THEN ADJUSTING THEM TO LEVEL THE MACHINE ON ITS HORIZONTAL AXIS.

ADJUSTMENTS ON TOP CARD

LIGHTBOX

HIGH SCORE ADJUSTMENT

These adjustments allow replays for variations in high scores. See related card for instructions. Refer to recommended score card before making the changes. When changing scores, change the card on the playboard card holder to agree.

3 - 5 BALL ADJUSTMENT

This adjustment changes the number of balls played per game. The "Ball Count" unit steps once for each ball played until it reaches the third or fifth step, depending on how the 3 - 5 ball adjustment is set. The third or fifth ball leaving the playfield pulls in "O" relay, the motor runs and motor 1A pulses the add "Ball Count" unit to the 6th step. The 6th position "Ball Count" unit switch opens the circuit to the playboard contacts.

BOTTOM PANEL

1ST COIN CHUTE ADJUSTMENT AND 2ND CHUTE ADJUSTMENT

This adjustment provides for the 1st chute to set up the game or to parallel the 2nd chute which steps the replay credit unit. If the adjustment is in 1 play position, inserting a coin in the 1st chute will set up the game. Inserting a coin in the 2nd chute will step the replay unit. (2, 3, 4, or 5 steps) If the adjustment is in 2nd chute adjustment position, inserting a coin in either chute steps the replay unit.

BALL ROLL TILT PANEL

There are two sets of holes for mounting the tilt bob strike plate. By moving the strike plate closer to tilt bob support bracket the game will be less sensitive to tilting.

FRONT DOOR

COIN CHUTE SWITCH

The coin chute switches are carefully adjusted to the recommended pressures and gaps with a feeler gauge and a gram gauge. Under normal operation these switches will function as designed. However, if a sharp blow on the front door or dropping of the cabinet sets up the game, carefully inspect and adjust the coin chute switches as indicated on page 9 of this booklet.

SEE PLAYBOARD INFORMATION PAGE FOR MECHANICAL ADJUSTMENTS.

"RELAYS"

<u>NO.</u>	<u>COIL NO.</u>	<u>TYPE</u>	<u>CONTACTS</u>	<u>USE</u>
A-	A-3891	INTER-	5A, 1B	RESET COMPLETED RELAY
AR	A-489	LOCK		
B	A-9735	AG.	3A	TARGET AND ROLLOVER VALUE CONTROL RELAY
C	A-9735	AG.	3A	LEFT POP BUMPER RELAY
D	A-9735	AG.	3A	RIGHT POP BUMPER RELAY
E	A-9735	AG.	3A	CENTER POP BUMPER RELAY
F	A-489	AS.	1A, 2 DISC	00-90 UNIT RELAY
G	A-9735	AG.	3A	SPECIAL RELAY
I	A-9740	AG.	2A, 1B, 3C	ALTERNATING RELAY
L	A-9735	AG.	5A	1000 POINT RELAY
M	A-9735	AG.	4A	100 POINT RELAY
N	A-9735	AG.	4A	10 POINT RELAY
O	A-9735	AG.	5A, 1B	BALL RETURN RELAY
P	A-9740	AG.	4A, 1B, 1C	2 THROUGH 7 SEQUENCE COMPLETED RELAY
Q	A-9740	AG.	4A, 1B, 1C	8 THROUGH K SEQUENCE COMPLETED RELAY
R	A-9738	AG.	3A, 1B, 1C	HOLD RELAY
S	A-9735	AG.	3A, 2C	START RELAY
T	A-9742	AG.	1B	TILT RELAY
U	A-9746	AG.	1A, 1B	SERIES RELAY
W	A-9740	AG.	3A, 2B	2ND. CHUTE RELAY

"SEQUENCE BANK"

<u>NO.</u>	<u>COIL NO.</u>	<u>CONTACTS</u>	<u>USE</u>
2B	A-1119	1A, 1B	"2" TARGET AND ROLLOVER RELAY
3B	A-1119	1A, 1B	"3" TARGET RELAY
4B	A-1119	1A, 1B	"4" TARGET RELAY
5B	A-1119	1A, 1B	"5" TARGET RELAY
6B	A-1119	1A, 1B	"6" TARGET RELAY
7B	A-1119	1A, 1B	"7" TARGET RELAY
8B	A-1119	1A, 1B	"8" TARGET RELAY
9B	A-1119	1A, 1B	"9" TARGET RELAY
10B	A-1119	1A, 1B	"10" TARGET RELAY
11B	A-1119	1A, 1B	"J" TARGET RELAY
12B	A-1119	1A, 1B	"Q" TARGET RELAY
13B	A-1119	1A, 1B	"K" TARGET AND ROLLOVER RELAY
14B	A-1119	2A, 2B, 1C	"A" TARGET RELAY

"OTHER COILS USED"

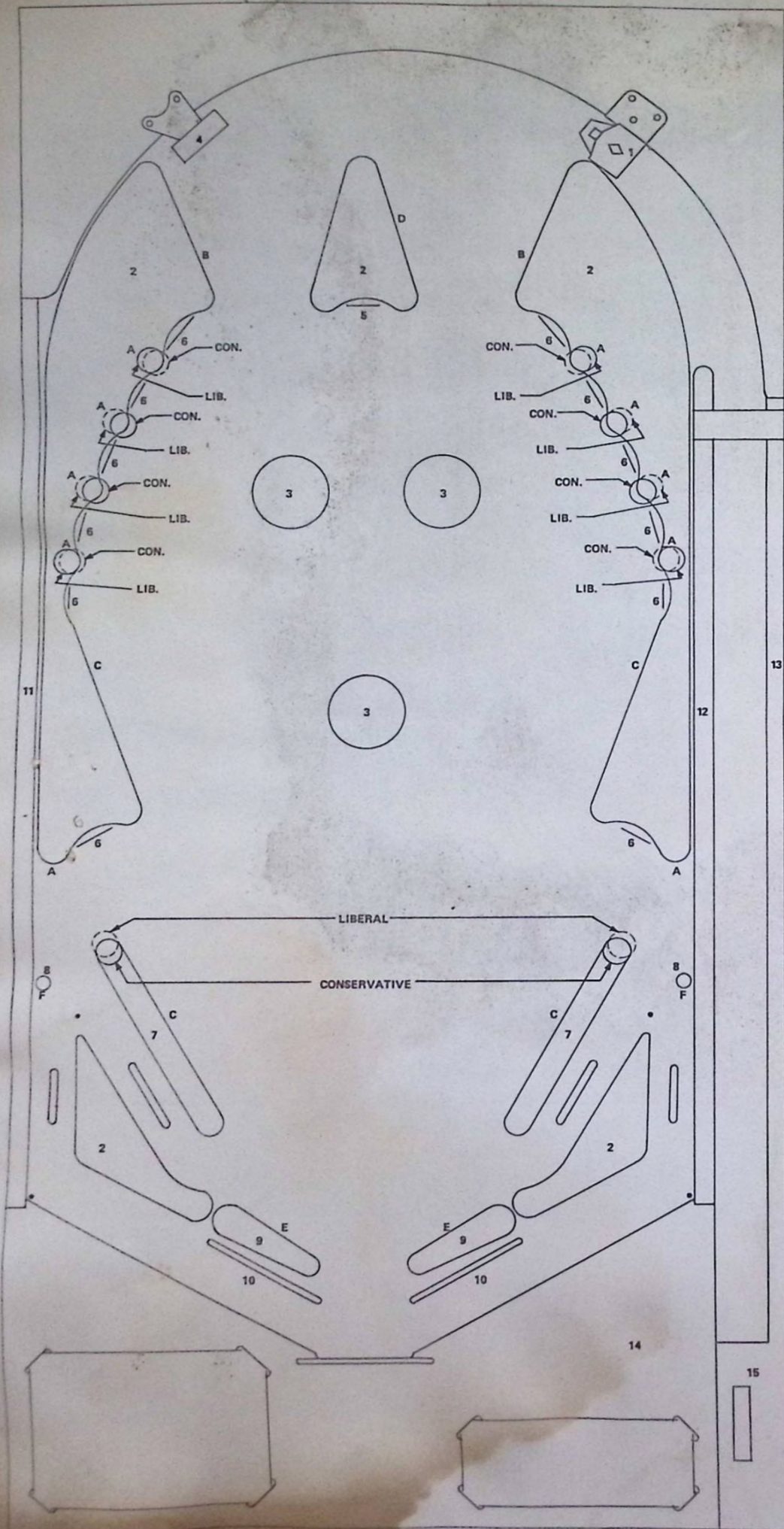
<u>COILS NO.</u>	<u>DESCRIPTION</u>
A-5141	FLIPPER COILS
A-5194	KICKING RUBBER COILS
A-4893	POP BUMPER COILS
A- 5195	CHIME COILS
A-1496	ADD BALL COUNT UNIT COIL
A-5194	RESET BALL COUNT UNIT COIL
A-1496	ADD REPLAY UNIT COIL
A-5194	SUBTRACT REPLAY UNIT COIL
A-9154	SCORING UNIT COILS
A-5194	KNOCKER COIL
A-1496	BALL RETURN COIL
A-7677	COIN LOCKOUT COIL
A-7800	SEQUENCE BANK RESET COILS
A-7760	MOTOR 60 Hz.
A-11550	MOTOR 50 Hz.
B-3235	TRANSFORMER 115V.
B-8660	TRANSFORMER 230V.
A-7766	MOTOR CAM ASSEMBLY

"DISC & WIPERS USED"

	<u>GEAR & SHAFT</u>	<u>DISC</u>	<u>WIPER</u>
BALL COUNT UNIT	A-11668	B-15004	B-9998
00-90 UNIT	A-9012	A-9016	B-9015
(F RELAY)		A-9017	B-9015
SCORE UNITS		C-12493	B-9166

TOP CARD MOTOR SWITCHES

MOTOR 1A "S" Pos.	Inside Sw. Second Sw. Third Sw.	- Resets thousands and ten thousands units. - Adds ball count unit. (at game over) - Scoring.
MOTOR 1C "S" Pos.	Inside Sw. Second Sw. Third Sw. Fourth Sw. Fifth Sw. Sixth Sw.	- Motor runout. - Opens circuit to coin chute switches and replay button. - Opens circuit to ball return and trough switches. - Opens circuit to "G" relay. - Opens circuit to playboard lights. - Opens circuit to playboard contacts.
MOTOR 1D	Switch	- Adds replay on match.
MOTOR 1E	Inside Sw. Second Sw.	- Rollover button score control switch. - Rollover button value light control switch.
MOTOR 2B	Inside Sw. Second Sw. Third Sw. Fourth Sw.	- "S", "W", and "X" relay lockin. - "O" relay lockin. - "B" and "G" relay lockin. - Resets "A" relay.
MOTOR 2C "L" Pos.	Inside Sw. Second Sw. Third Sw.	- Coin chute credit totalizer. - Actuates "A" relay, total playmeter, resets "Ball Count" unit and subtracts "Replay" unit. - Resets sequence bank.
MOTOR 3E	Inside Sw. Second Sw. Third Sw.	- Rollover button score control switch. - Center rollover button special control switch. - Center rollover light control switch.
MOTOR 4A "S" Pos.	Switch	- Resets tens and hundreds units.
MOTOR 4B	Switch	- Coin chute credit totalizer.
MOTOR 4C "S" Pos.	Inside Sw. Second Sw. Third Sw.	- Coin chute credit totalizer. - Special control and 1,000 point score (3 ball only.) - Actuates ball return.
MOTOR 4E	Inside Sw. Second Sw.	- Rollover button score control switch. - Rollover button value light control switch.



PLAYBOARD INFORMATION

RUBBER RINGS

A	A-10217	(10)	3/8"
B	A-10221	(2)	2"
C	A-10223	(4)	3"
D	A-10224	(1)	3 1/2"
E	A-13151	(2)	1 1/2"
F	A-14793	(2)	MINI

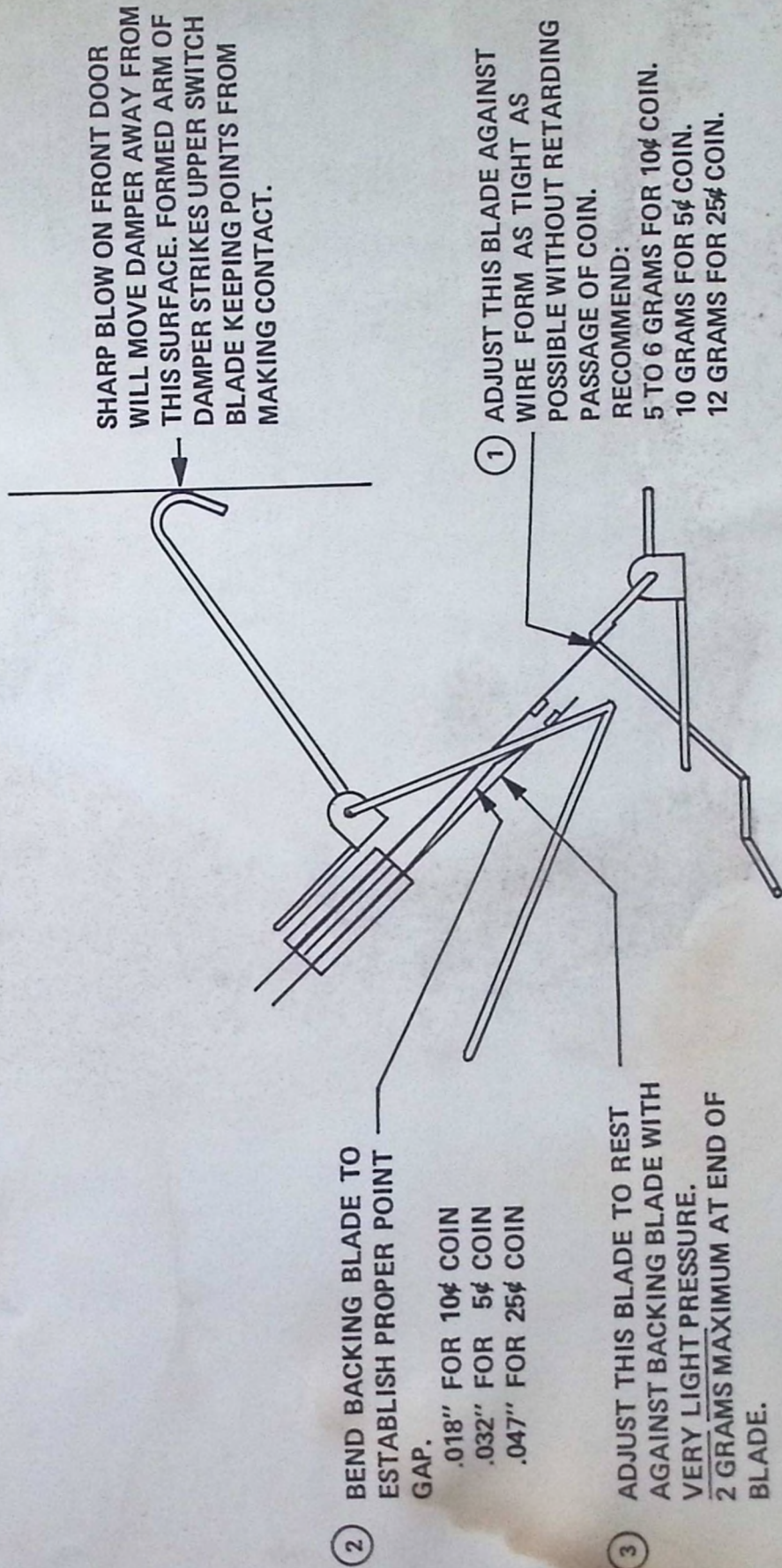
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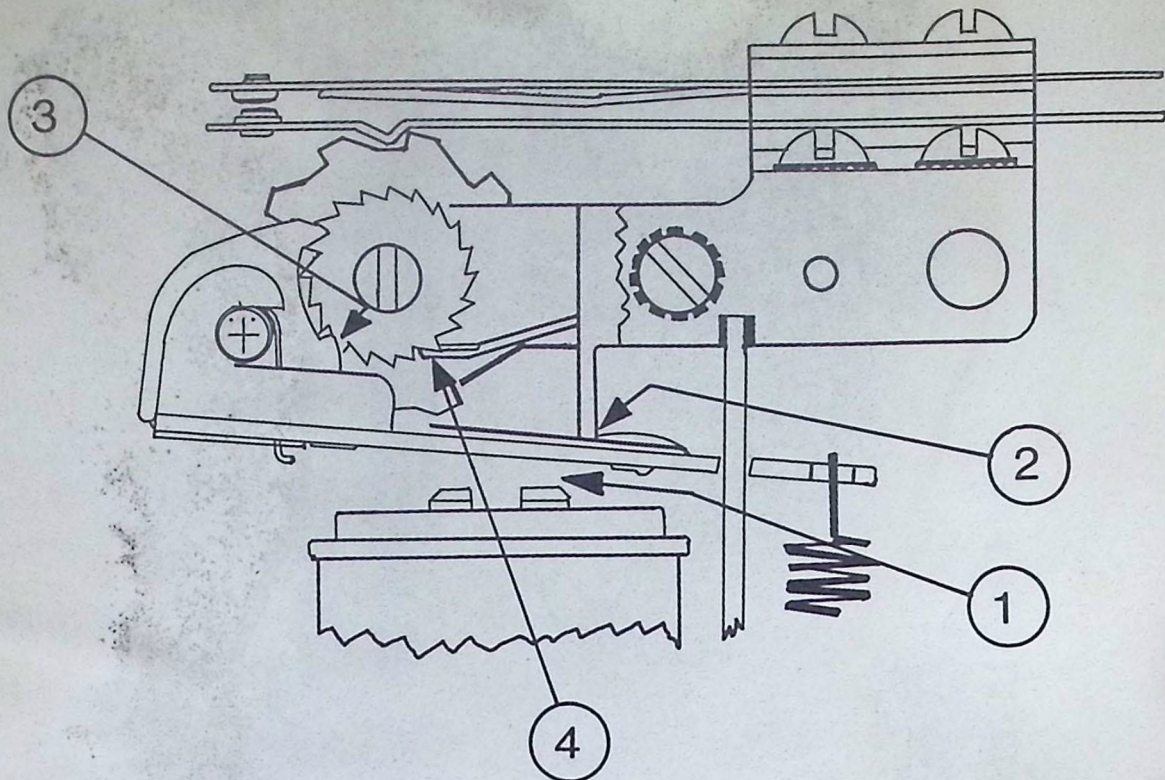
1. A-3290 Ball Gate.
2. D-15062 Plastic Shield Set.
3. Yellow Pop Bumper A-10436 and A-11836 Cap in Red.
4. A-9143 Rebound Rubber.
5. A-14787 Red Target. (B-9591 Target and Sw. Assem.)
6. A-14787 White Target. (B-9591 Target and Sw. Assem.)
7. A-9821 Adj. Metal Shield.
8. A-14792 Mini Screw Post.
9. A-13150 Flipper.
10. A-13798 Ball Snubber Rail. (Wire Form)
11. C-9373 Left Side Wood Rail.
12. C-9771 Center Wood Rail.
13. C-13977 Right Side Wood Rail.
14. D-13467 Card Holder.
15. C-9767 Ball Shooter Gage.

C-11561 White Plastic Post (22)
1" High.

A-14887 Split Post Cap. (8)
A-14888 Split Post Base. (8)

COIN SWITCH ADJUSTMENT





"AS" RELAY ADJUSTMENT

If an adjustment is needed, follow steps as outlined below:

The gap between the armature and the pole piece of the coil as measured at (1) should be approximately .050 inches. The drive pawl should travel 1-1/4 to 1-1/2 teeth on ratchet spindle. Both of these conditions depend on the outboard bearings being perpendicular to the relay frame.

Tighten override stop (2) so that it just touches, but does not exert any pressure, on the armature. Check to see that the drive pawl is in firm contact with the ratchet spindle at (3).

Adjust the index spring to rest in the 1st tooth back of center (4) and to exert a minimum of pressure to the ratchet. This pressure can be adjusted by bending the index spring mounting arm. Check thru one revolution to be sure the index spring clears each tooth with a minimum of backlash.

Adjust bottom switch blade to rest lightly in depression of cam; adjust top blade so that the gap between points is 1/32 inches and resting very lightly against backing blade.

If relay is equipped with a disc, the wiper will stop in the center of a segment when the above adjustments are correct.